

$\begin{array}{c} || \\ / \quad \backslash \end{array}$

$F = \text{valence} - \left( \frac{1}{2}b + \text{all nb} \right)$

$BO = \frac{1}{2} (b - \text{anti-b})$

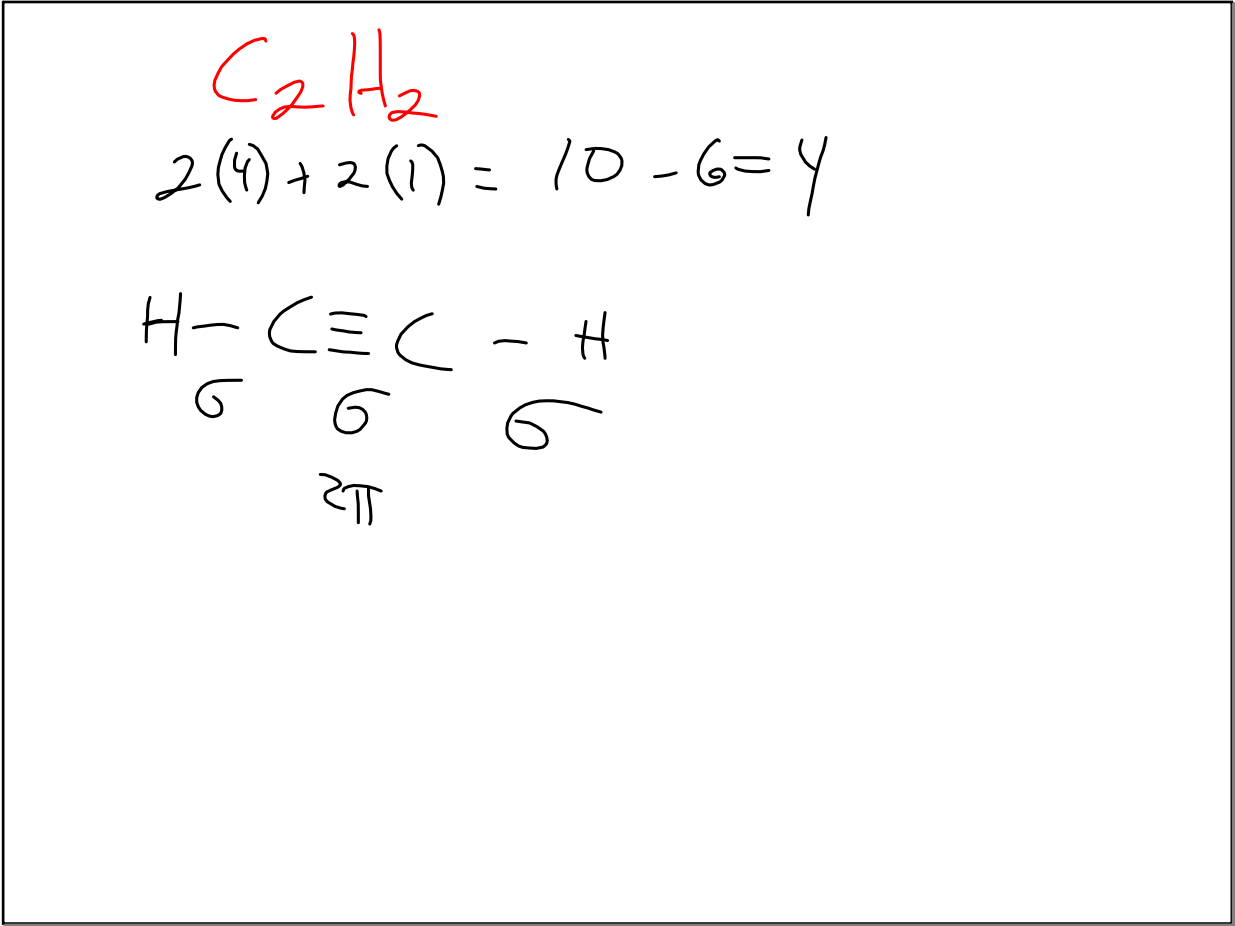
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The diagram illustrates the interaction of atomic orbitals between two atoms. On the left and right, two atoms are shown with their respective orbitals. The vertical axis represents the  $z$ -axis, and the horizontal axis represents the  $x$ -axis. The following orbitals are labeled:

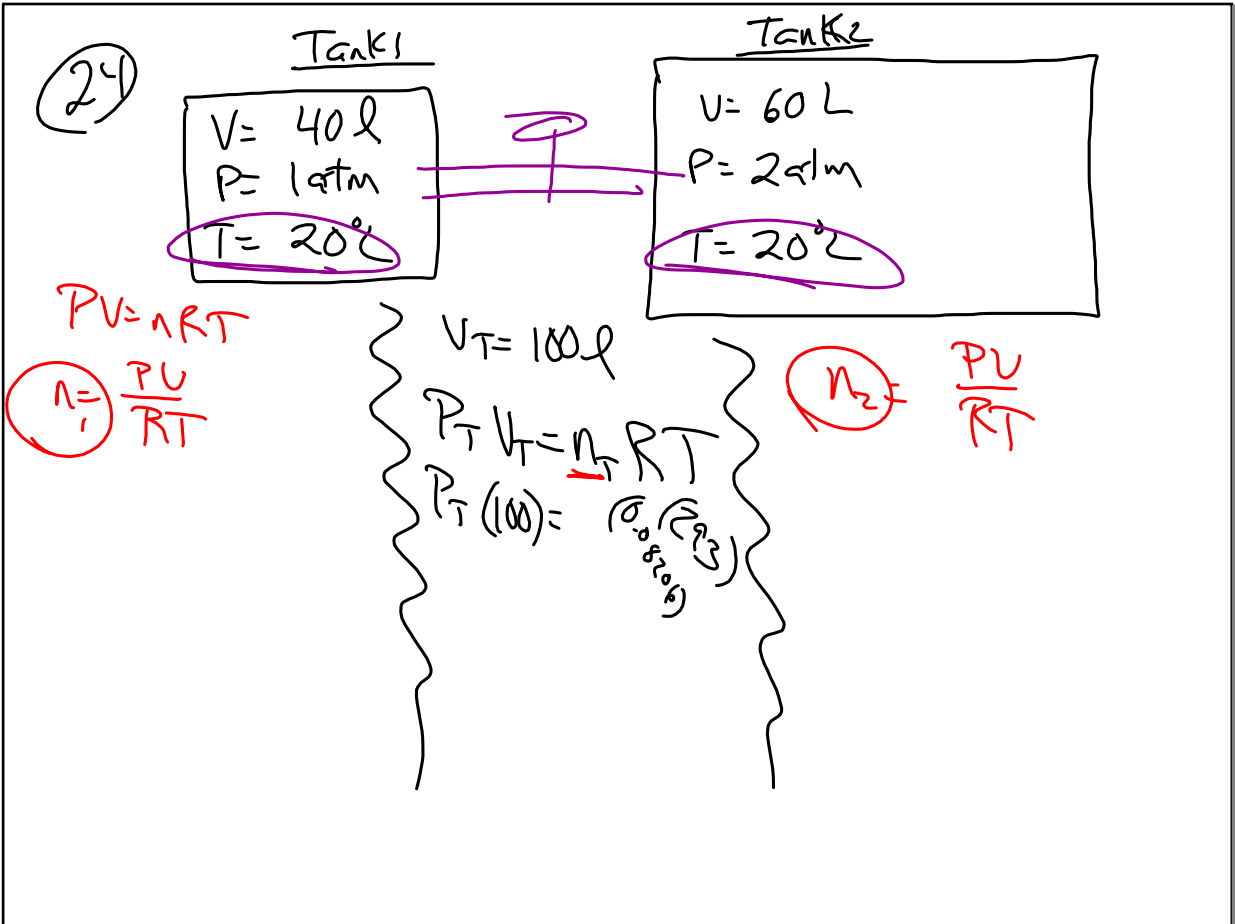
- $\pi_{py}$  (red dashed lines)
- $\pi_{pz}$  (purple dashed lines)
- $\sigma$  (green shaded region between atoms)
- $\sigma \pi \pi$  (red text below the right atom)
- $p$  (red text below the right atom)

The central region between the two atoms is shaded yellow, representing the bonding region. The orbitals are drawn in red and purple, with the  $p_x$  orbital highlighted in green.

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(29)



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$$V = 40 \text{ L}$$

$$T = 25^\circ = 298 \text{ K}$$

$$P = 763 \text{ mmHg} = 1.004 \text{ atm}$$

$$n = \frac{PV}{RT} = 1.642 \text{ mole}$$

1 mole $\text{N}_2$	2 mole $\text{NaN}_3$	65 g $\text{NaN}_3$
	3 mole $\text{N}_2$	1 mole $\text{NaN}_3$

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$$PV = nRT$$

$$\frac{PV}{1} = \frac{gRT}{MW}$$

$$g = \frac{PV(MW)}{RT}$$

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$$\textcircled{32} \quad d = \frac{5.75 \text{ g}}{R}$$

at STP  
273K  
0°C  
1 atm

$$\begin{aligned} P_{\text{gas}} &= X_{\text{gas}} P_{\text{T}} \\ &= (0.018) (760) \\ &= 13.68 \text{ atm} \end{aligned}$$

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